

007113561

1904 / 800 / 205

FIG. 1A

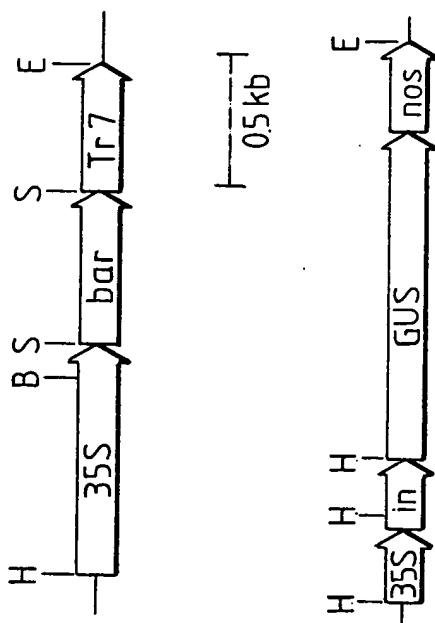
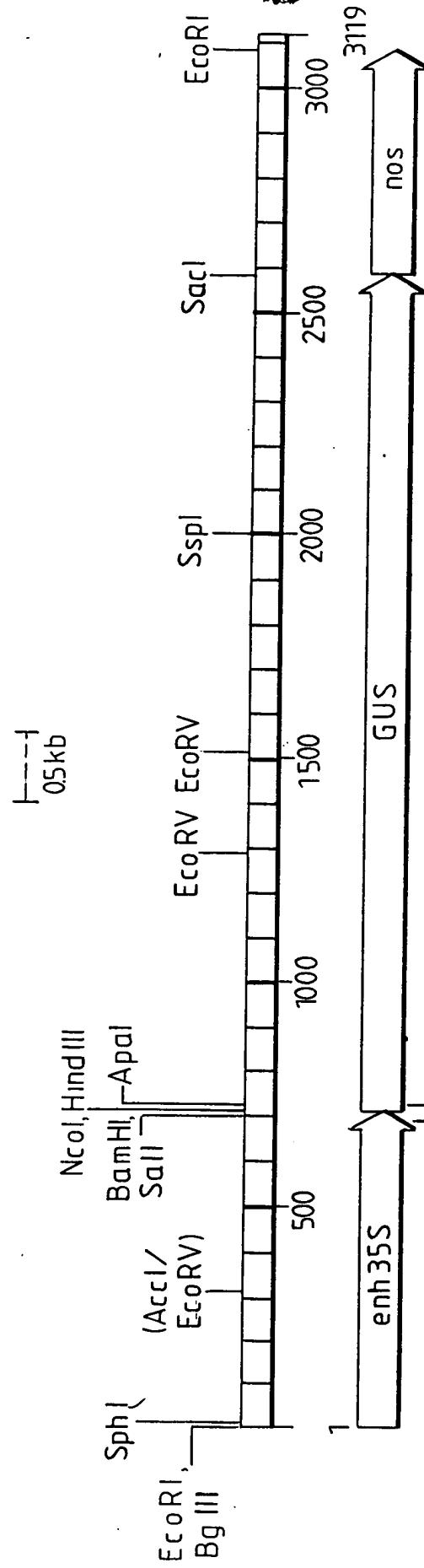


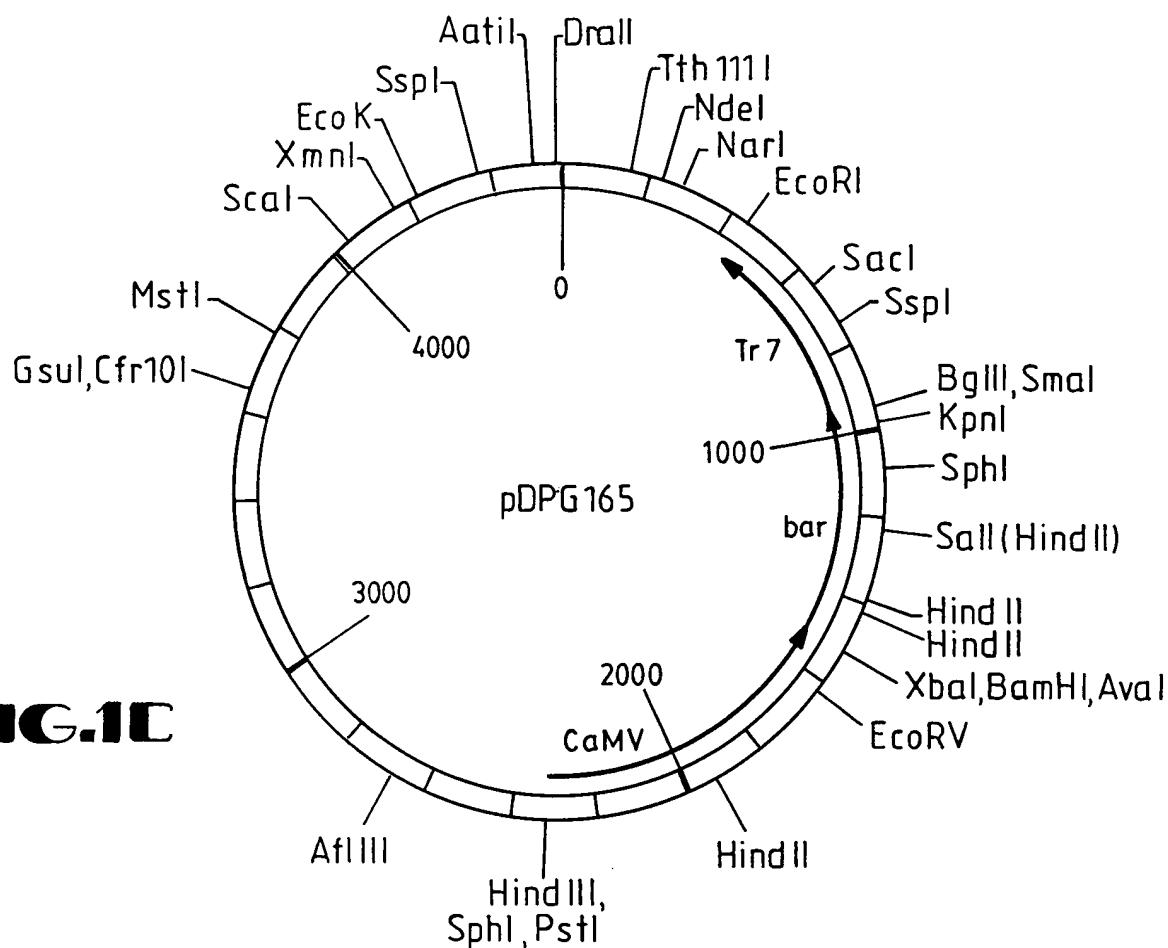
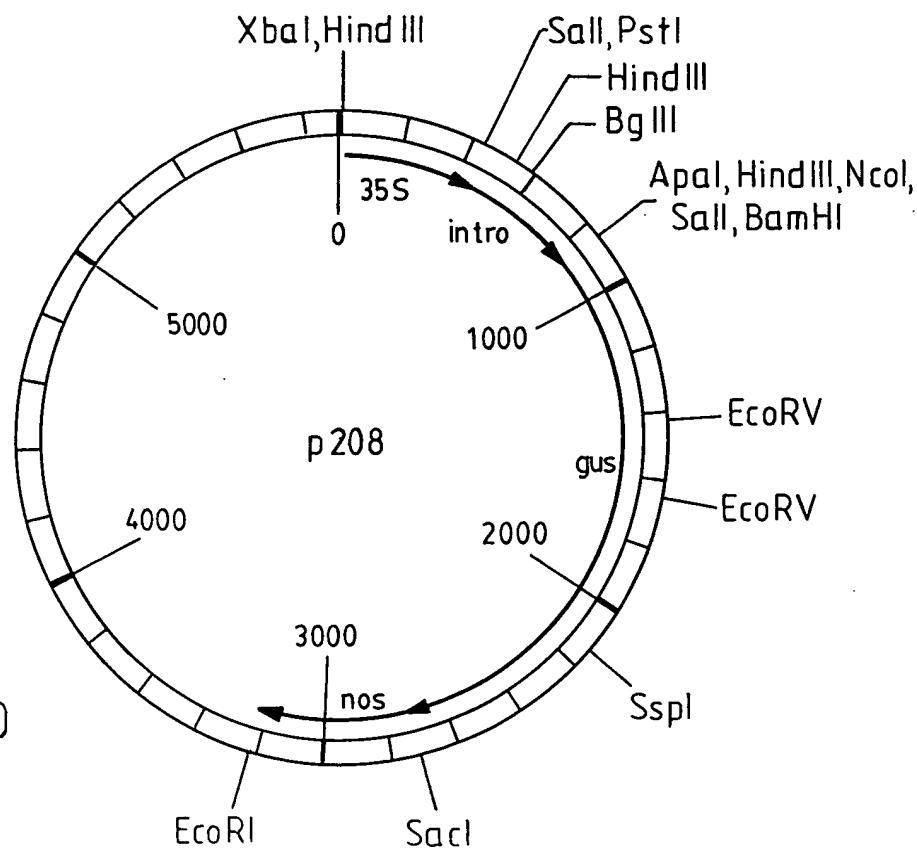
FIG. 1B



FIGURE

PAGUS1 (pDPG141) ...GAGGATCCGTGGACC[ATGG]TAA[GCTT]AGGGGGC...

BamHI Sall Ncol HindIII Apal

**FIG.1C****FIG.1D**

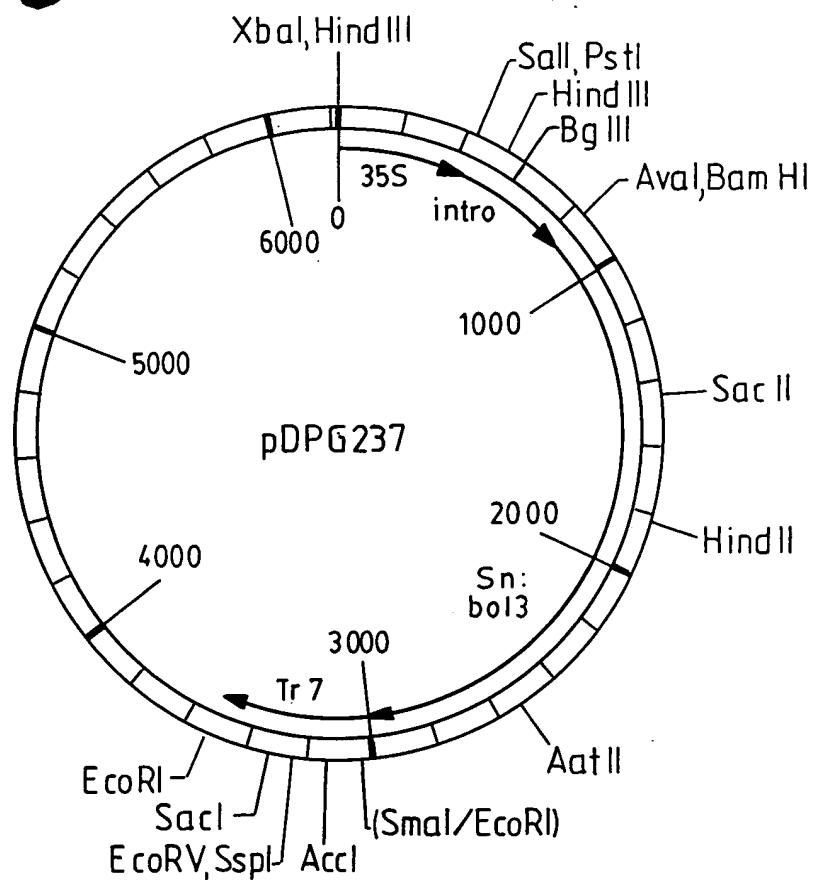
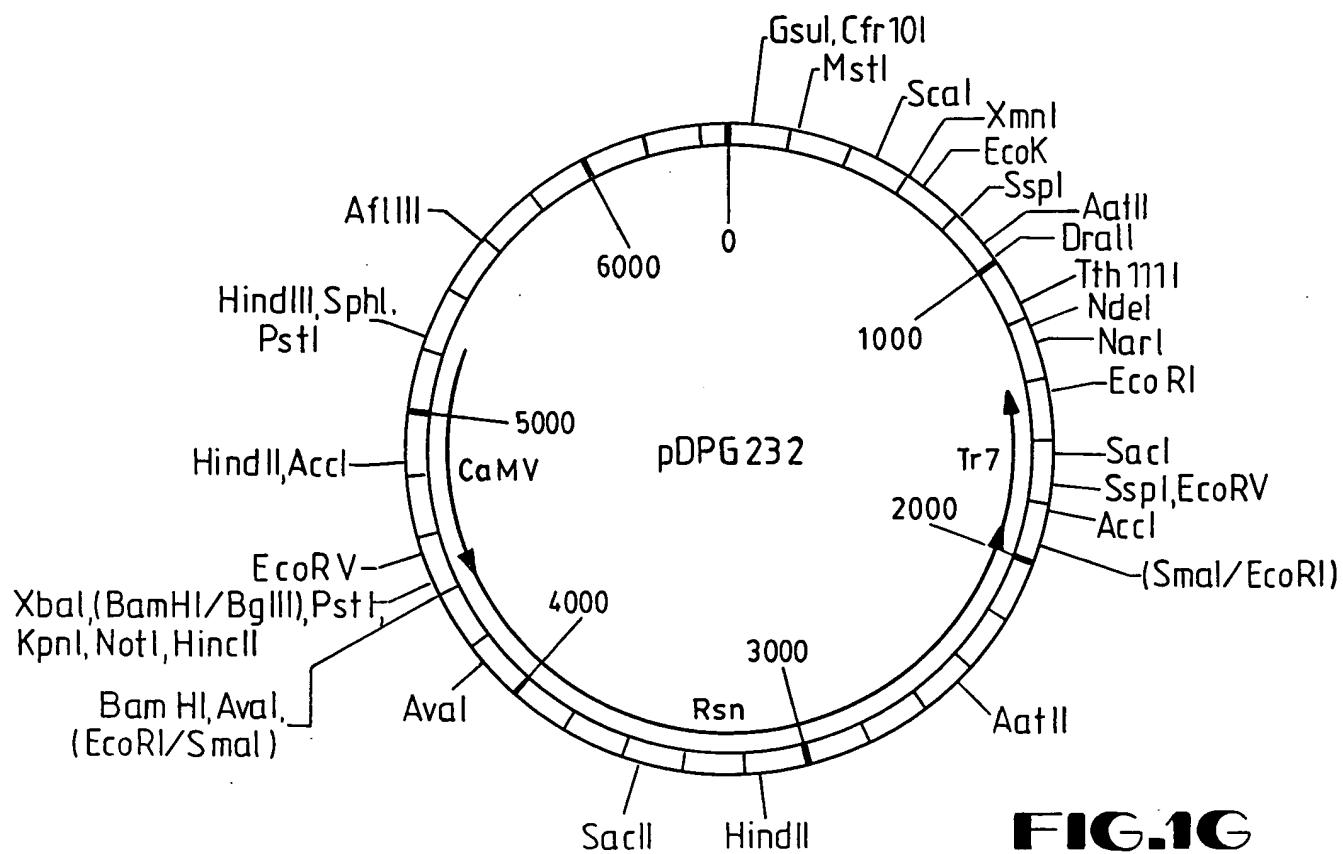
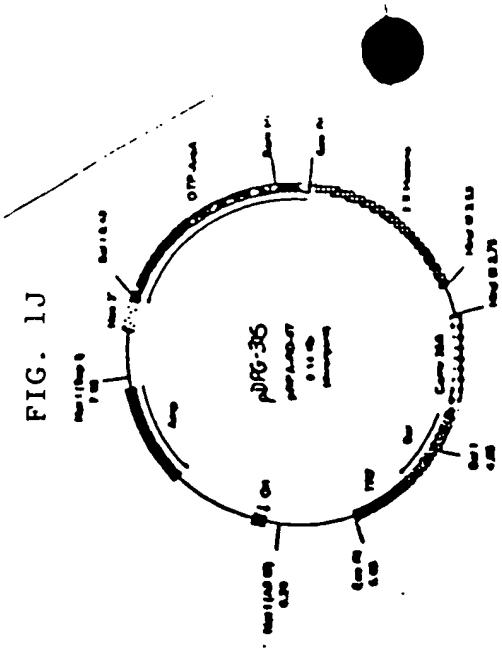
**FIG.1F****FIG.1G**

FIG. 1J



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FIG. 1M

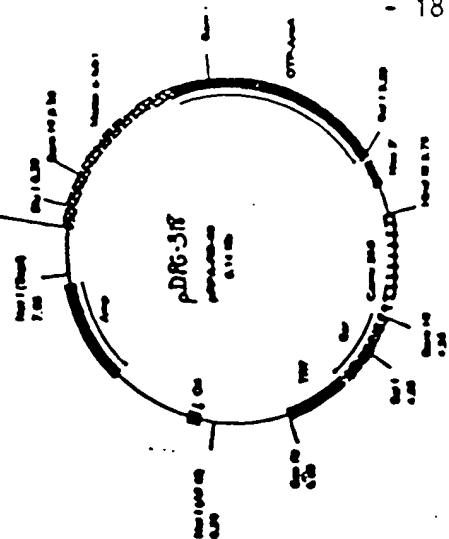


FIG. 1I

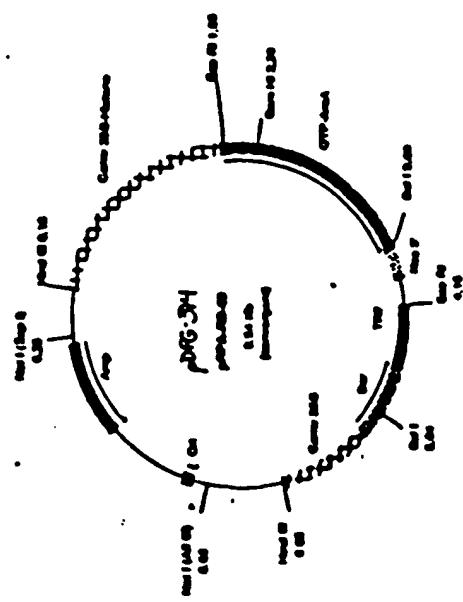


FIG. 1L

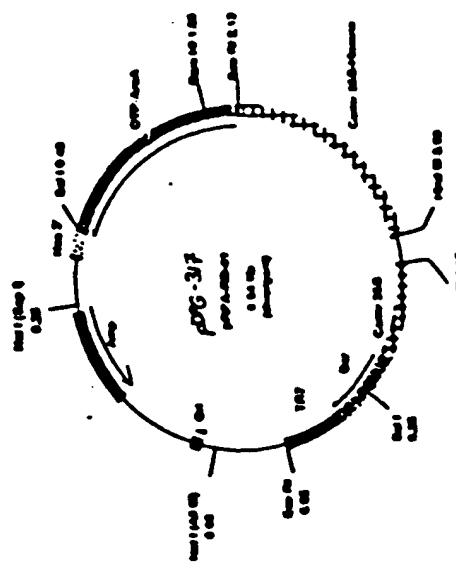


FIG. 1N

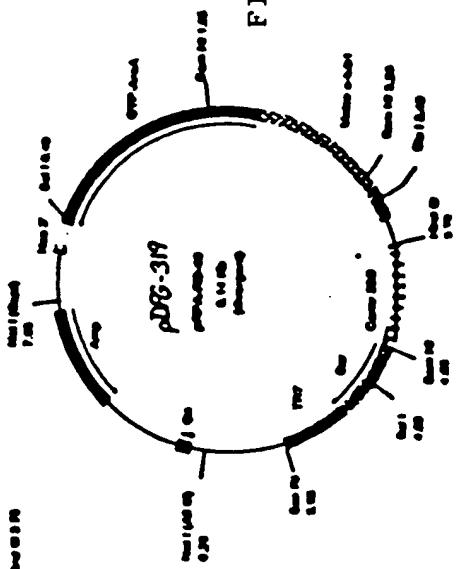


FIG. 1H

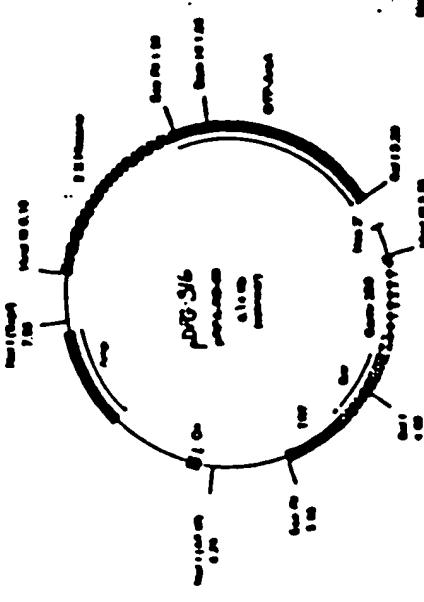
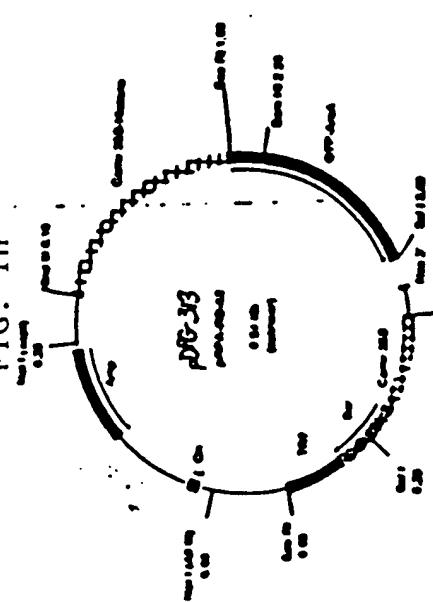


FIG. 1K

FIG. 1O)

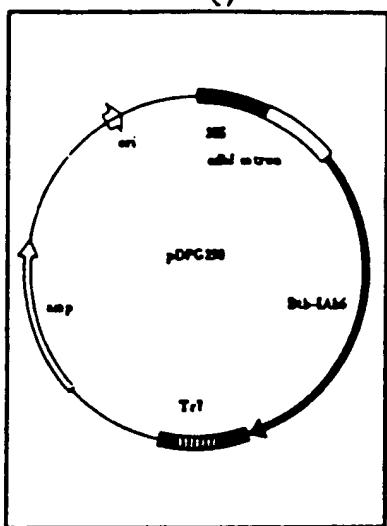


FIG. 1P

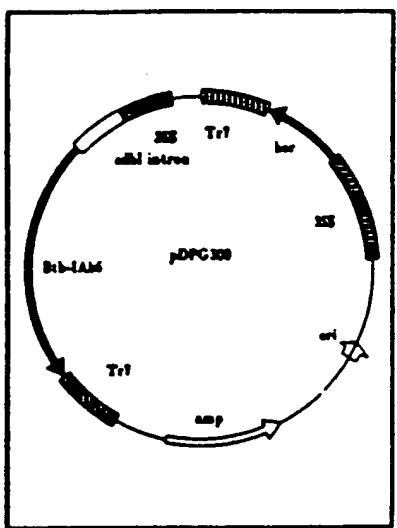


FIG. 1Q

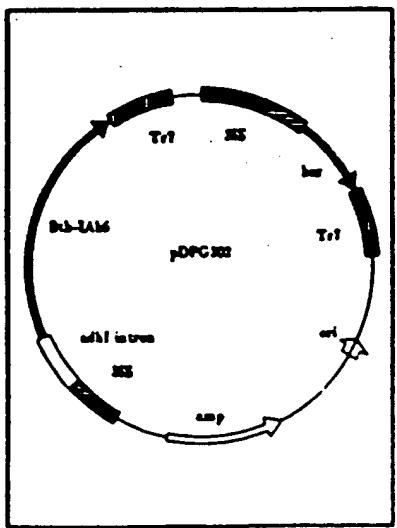
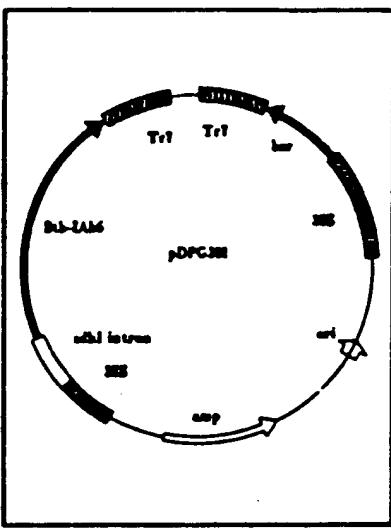


FIG. 1R

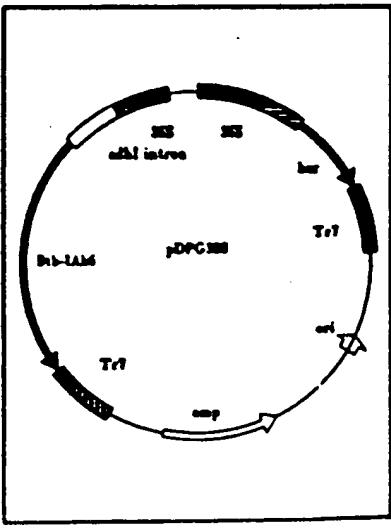


FIG. 1S

FIG. 1T

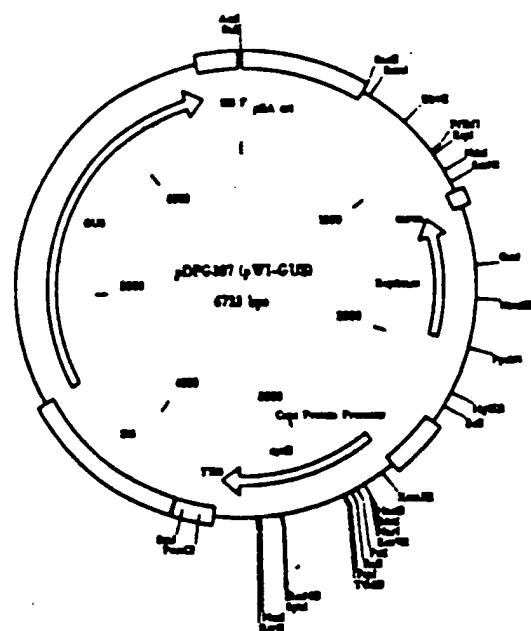
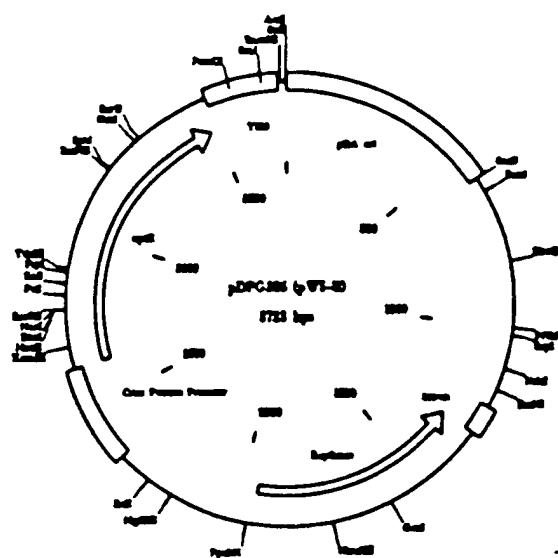


FIG. 1U

FIG. 1V

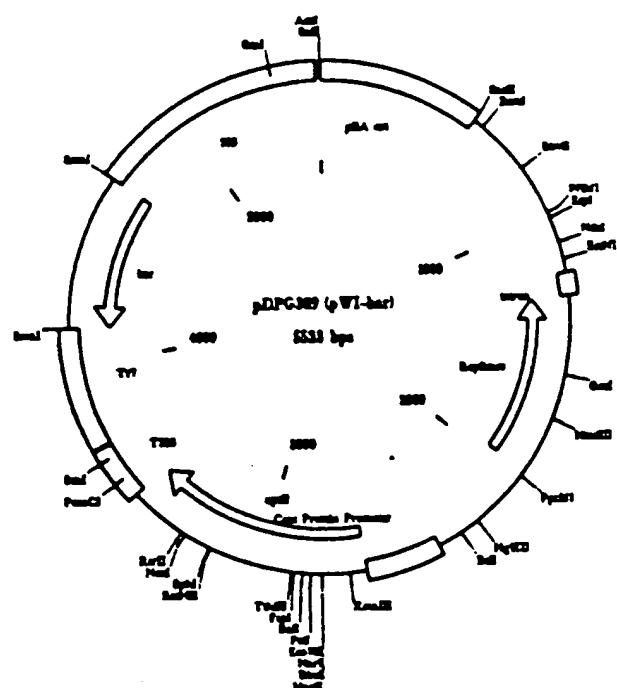
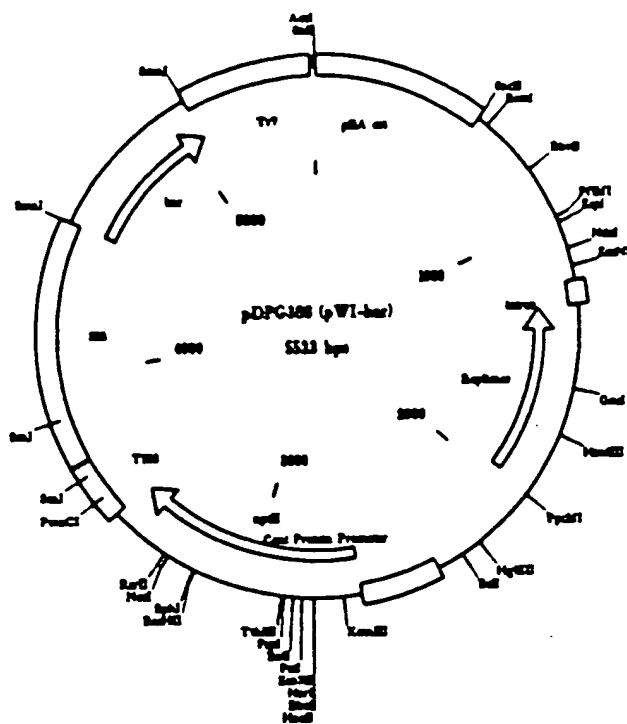


FIG. 1W

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pDPG140 AKA pCEV6 AdhI pro/intron-GUS-nos 07/26/88
6582 Base Pairs

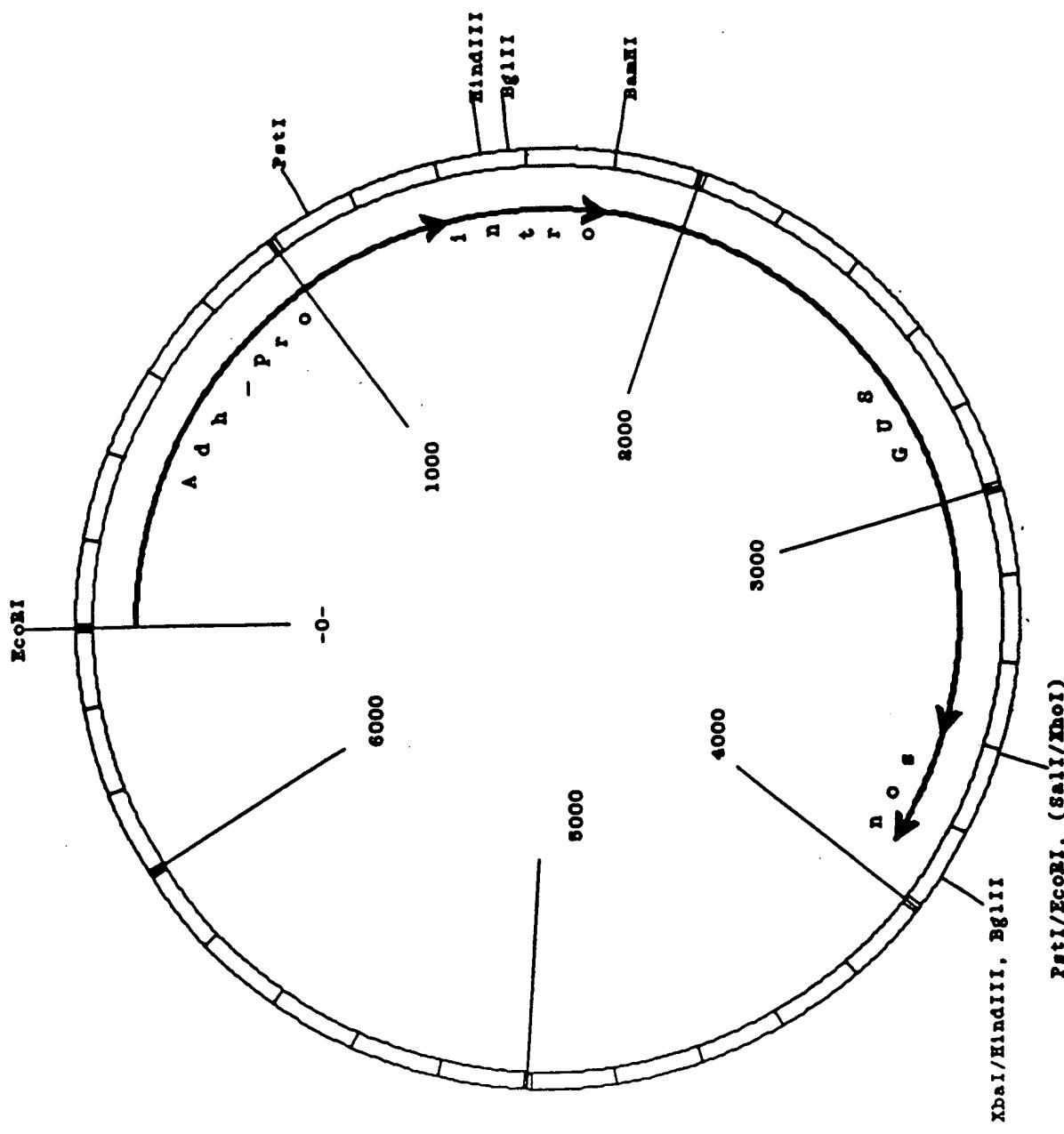


Fig. 1(X)

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pDPG172 Adh promoter/intron - lux - Tr γ 12/09/88
6875 Base Pairs

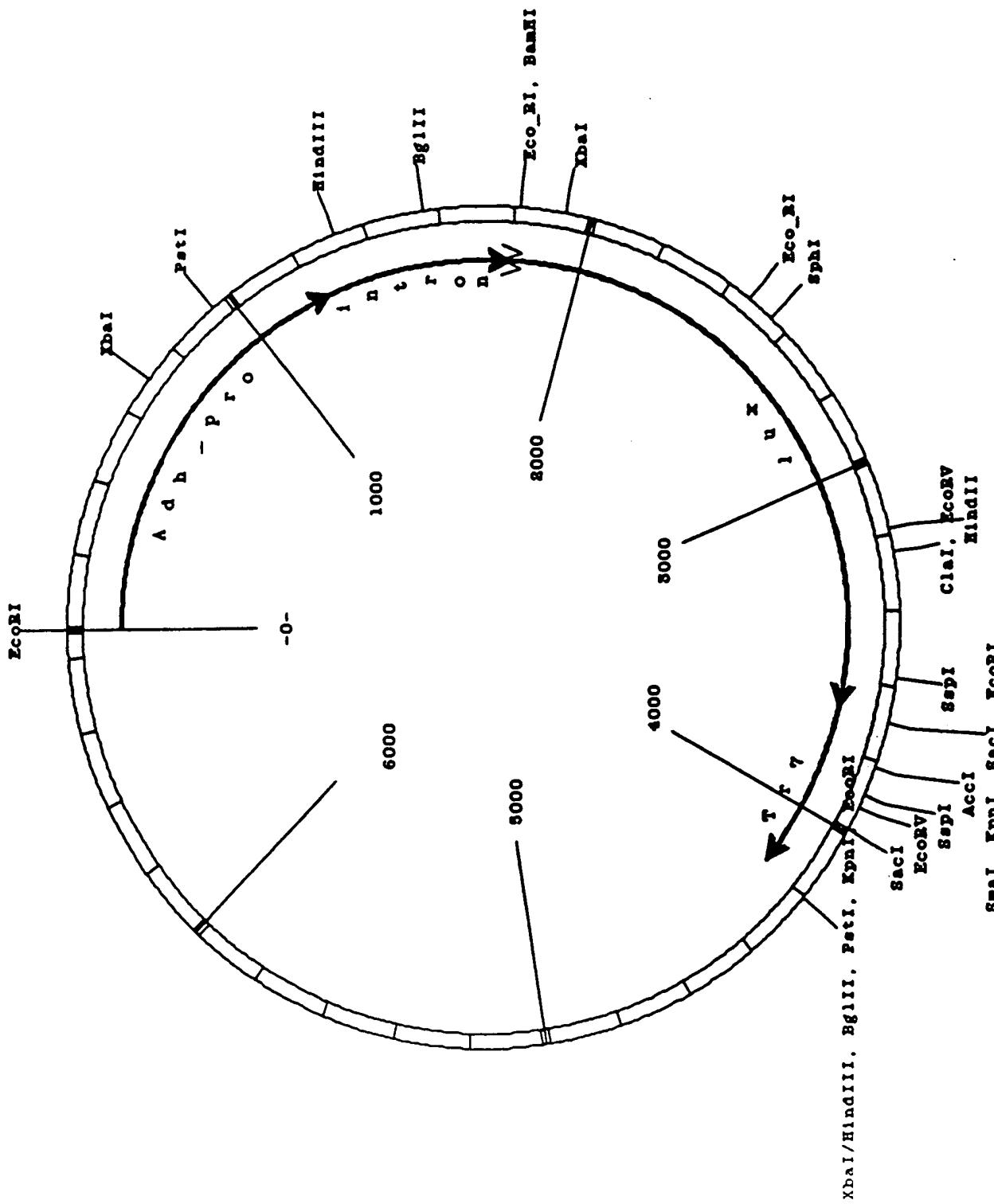


FIG. 1(Y)

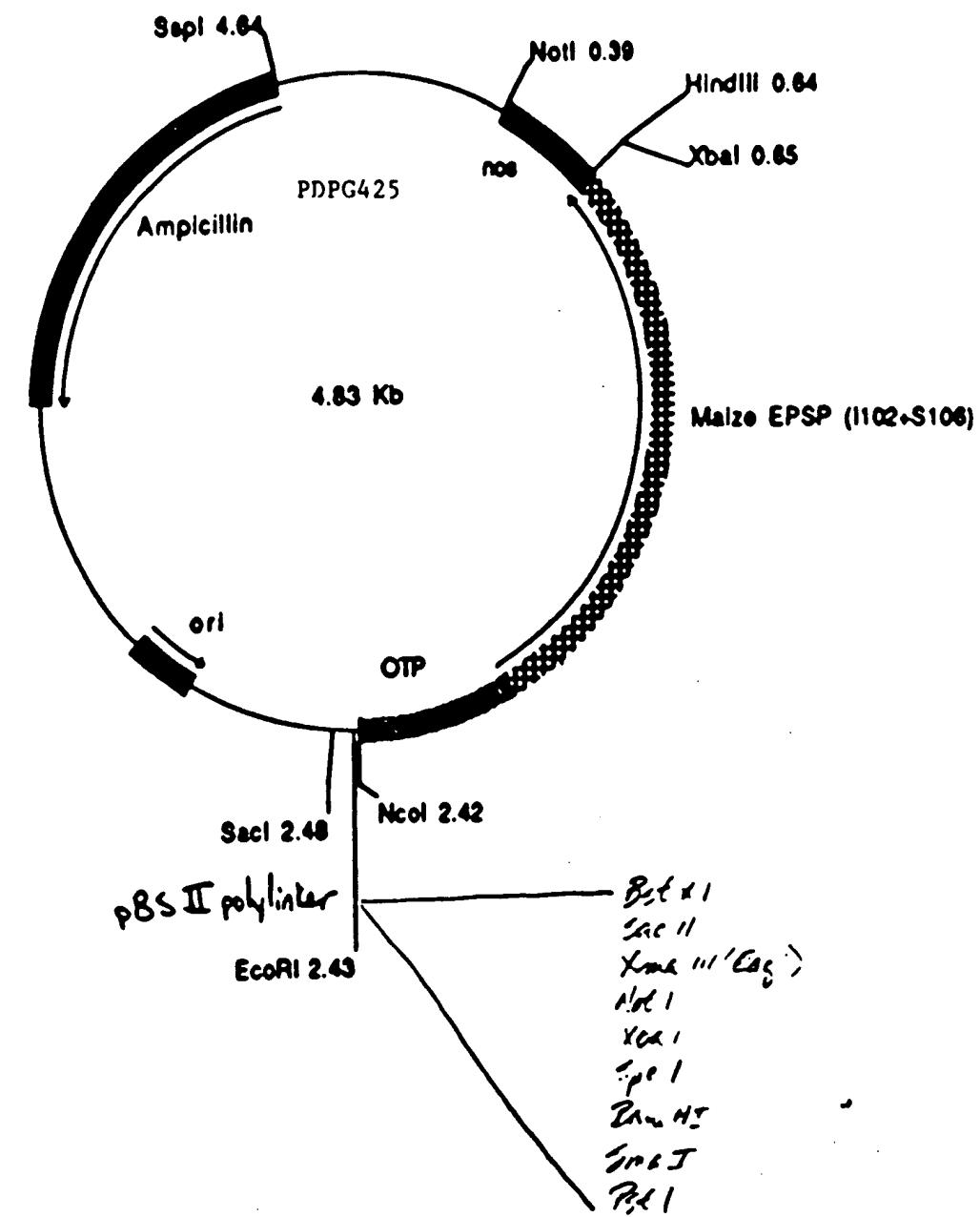


Fig. 1(Z) Schematic Representation of PDPG425

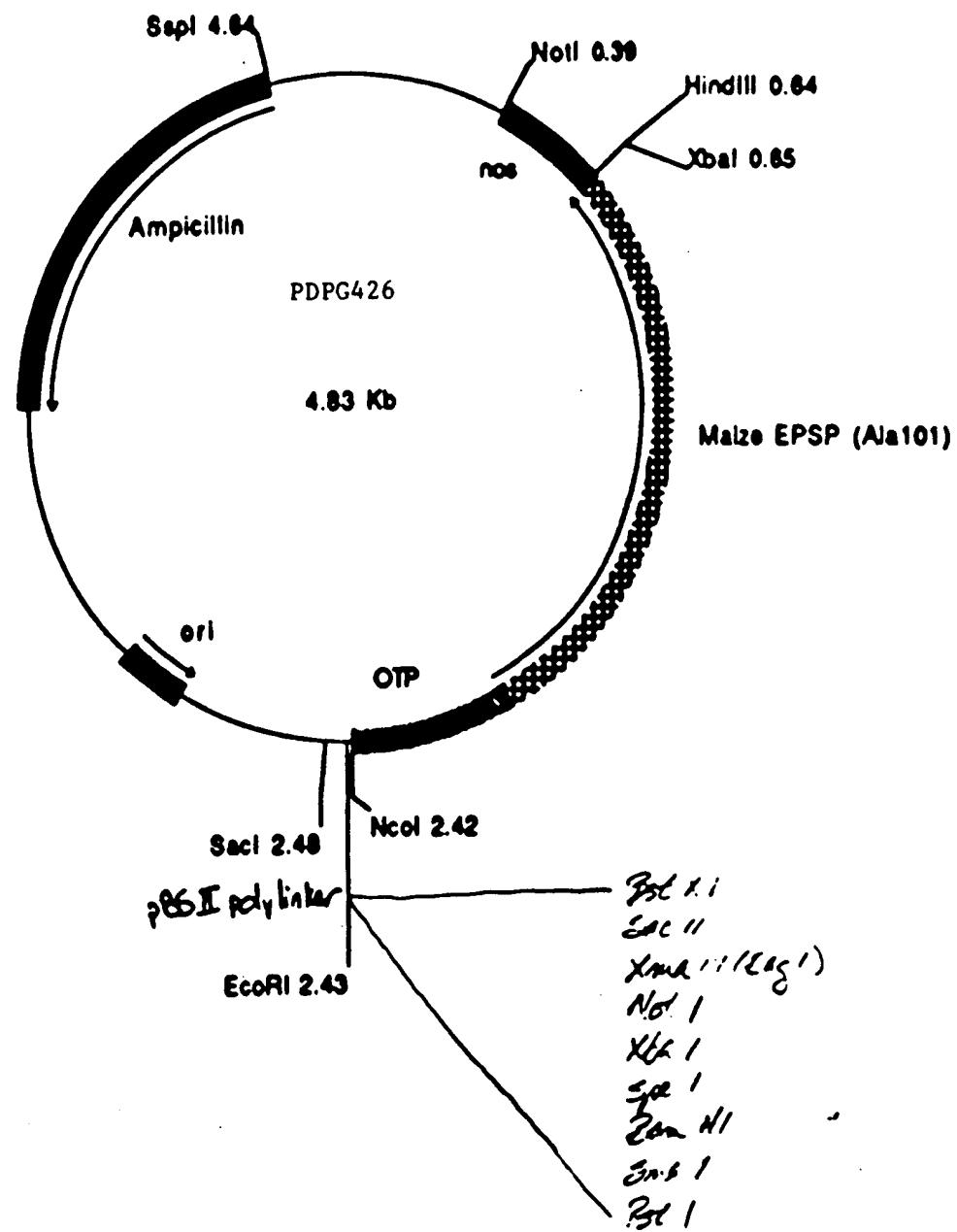


Fig. 1(AA) Schematic Representation of PDPG426

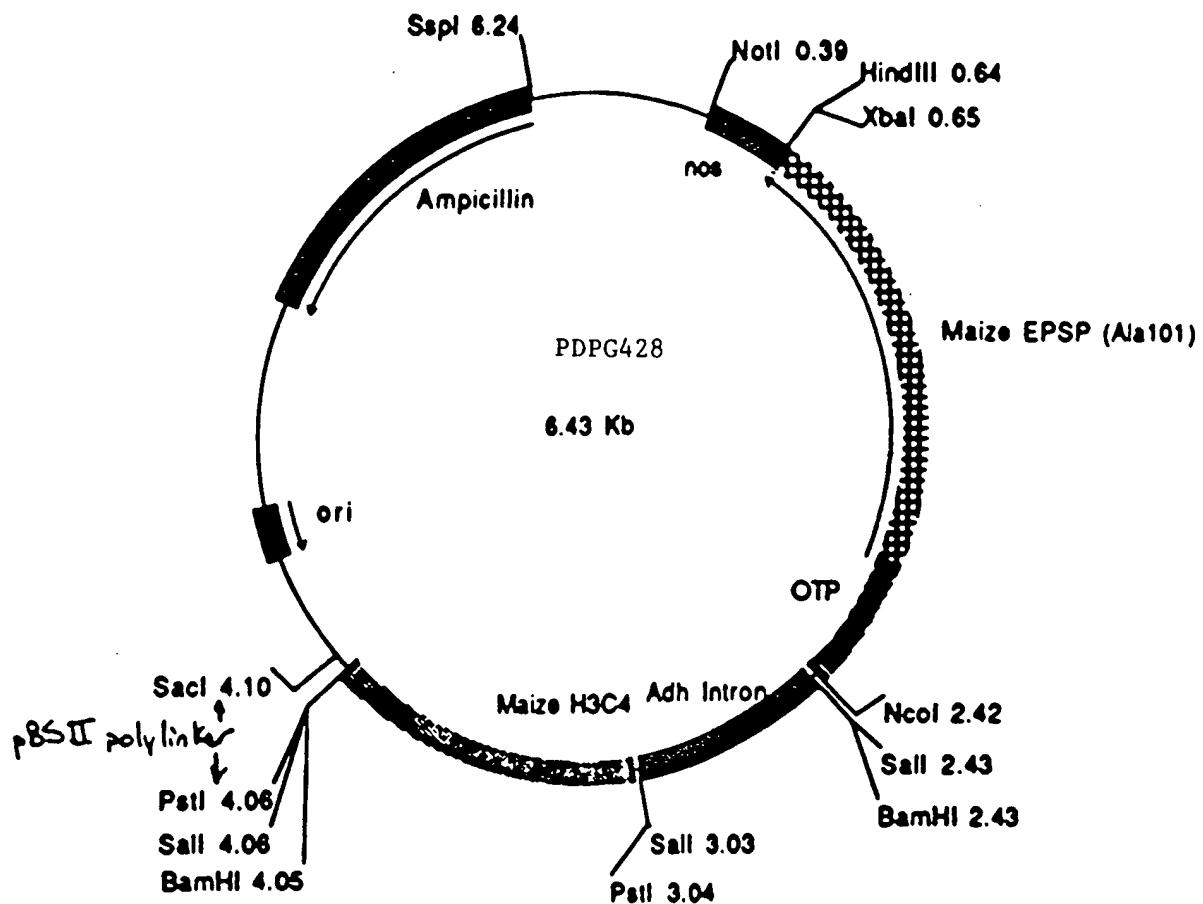


Fig. 1 (88) Schematic Representation of PDPG428

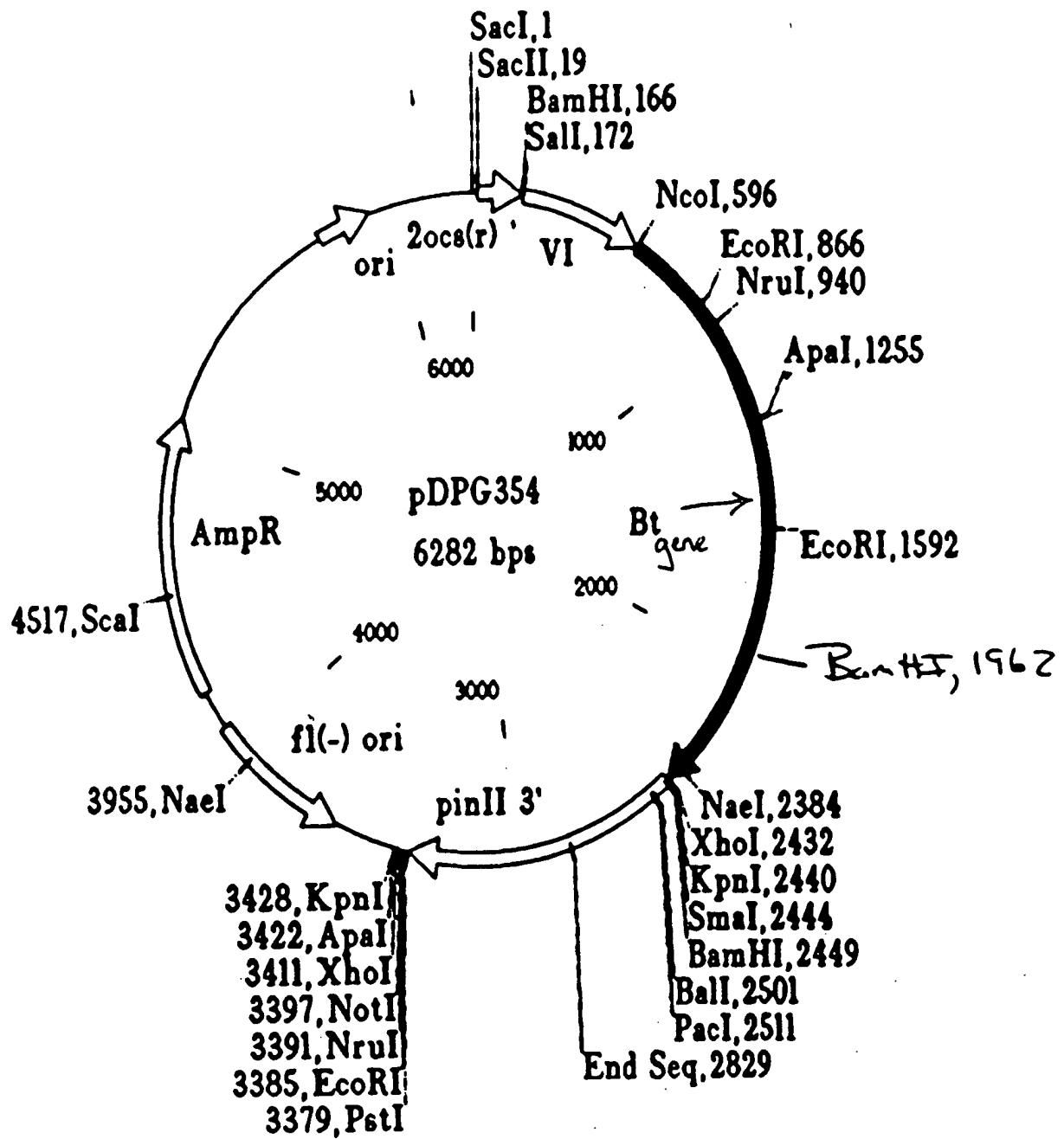


Fig. 1(CC)

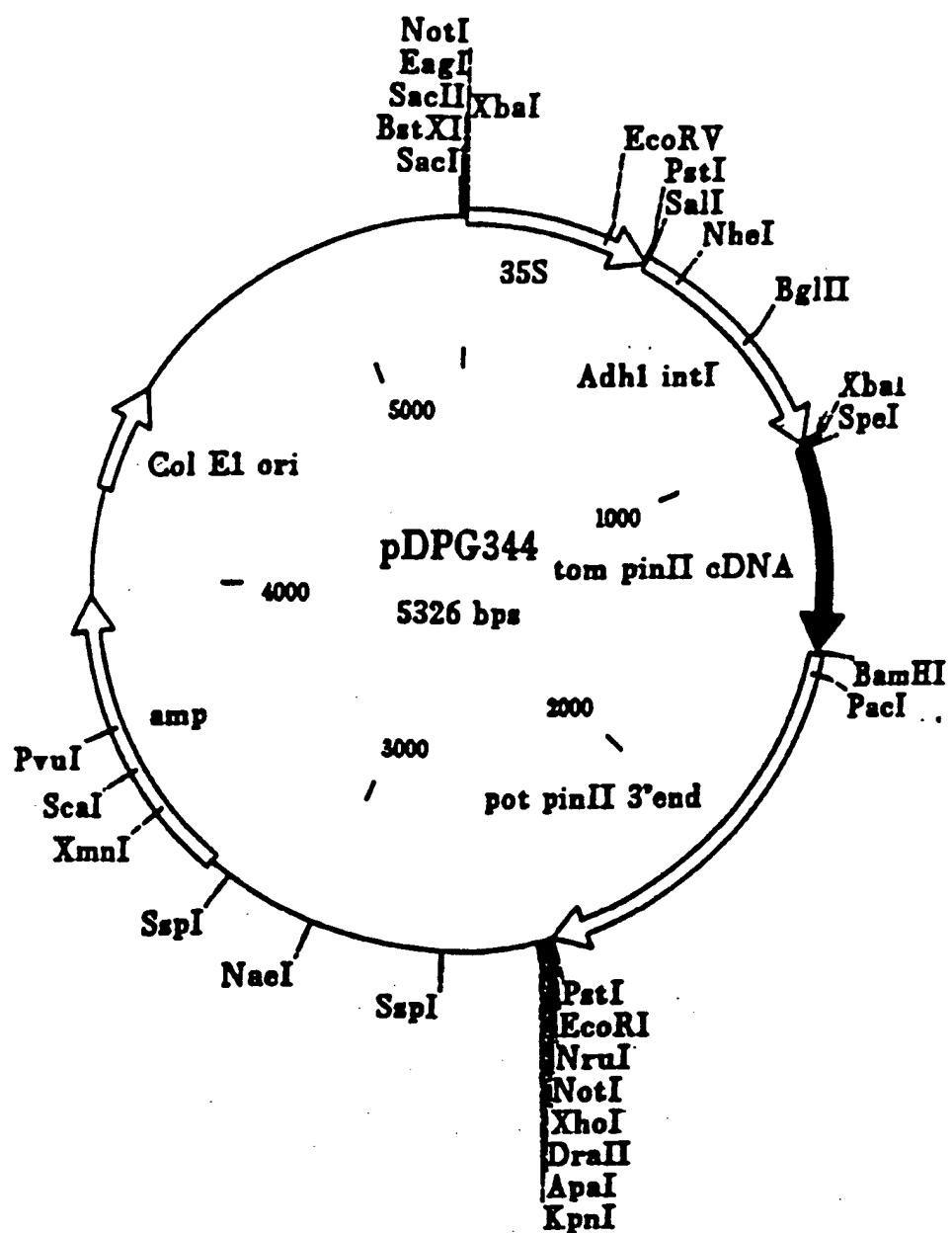


Fig. 1(3D)

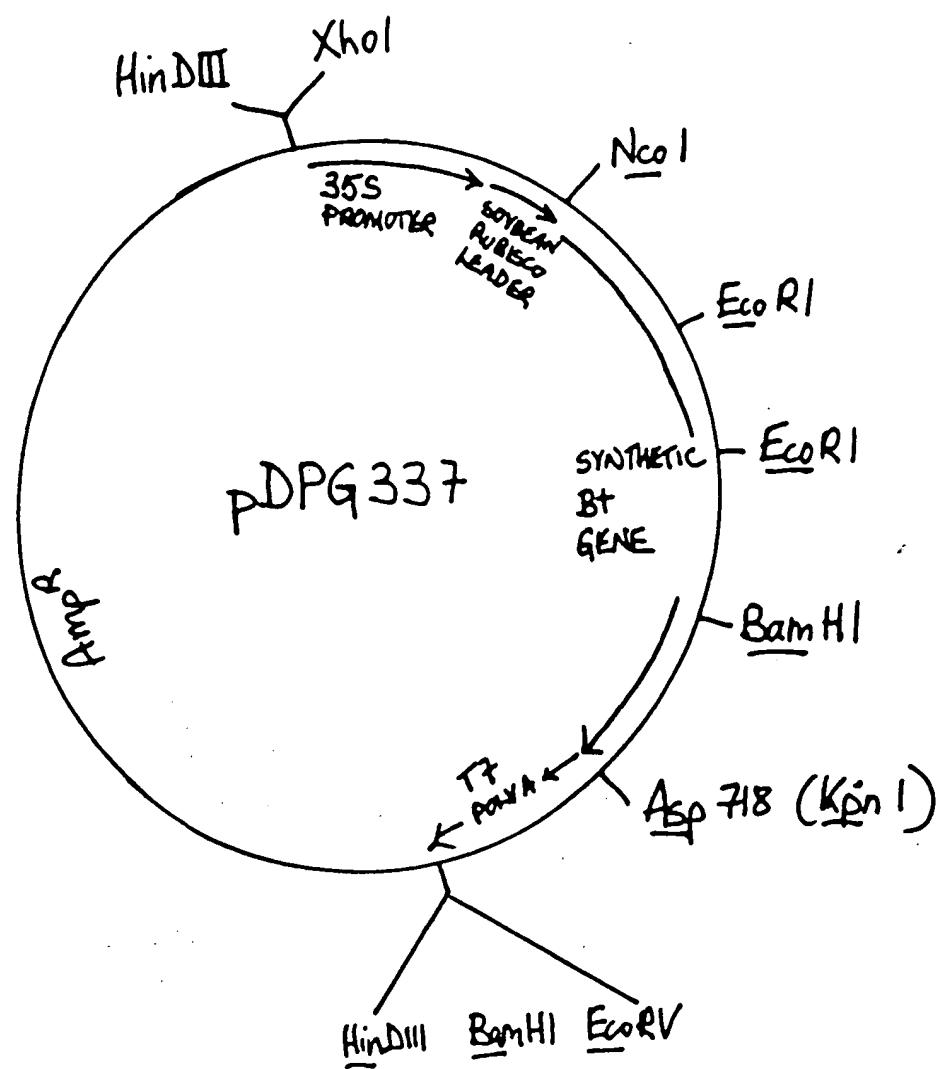


Fig. 1(EE) Plasmid map of PDPG337

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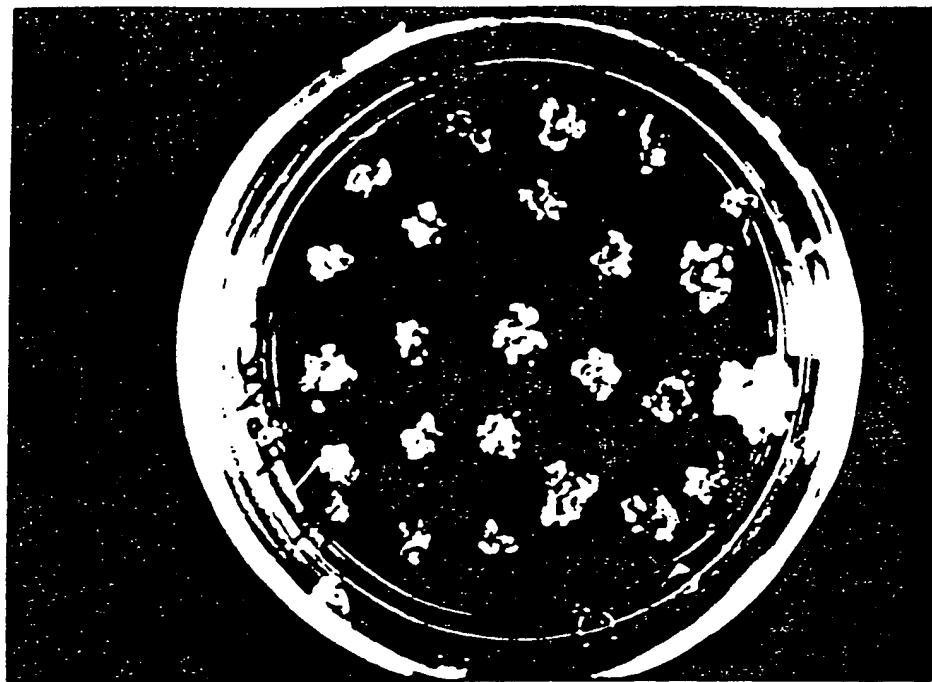


FIG. 2A



FIG. 2B

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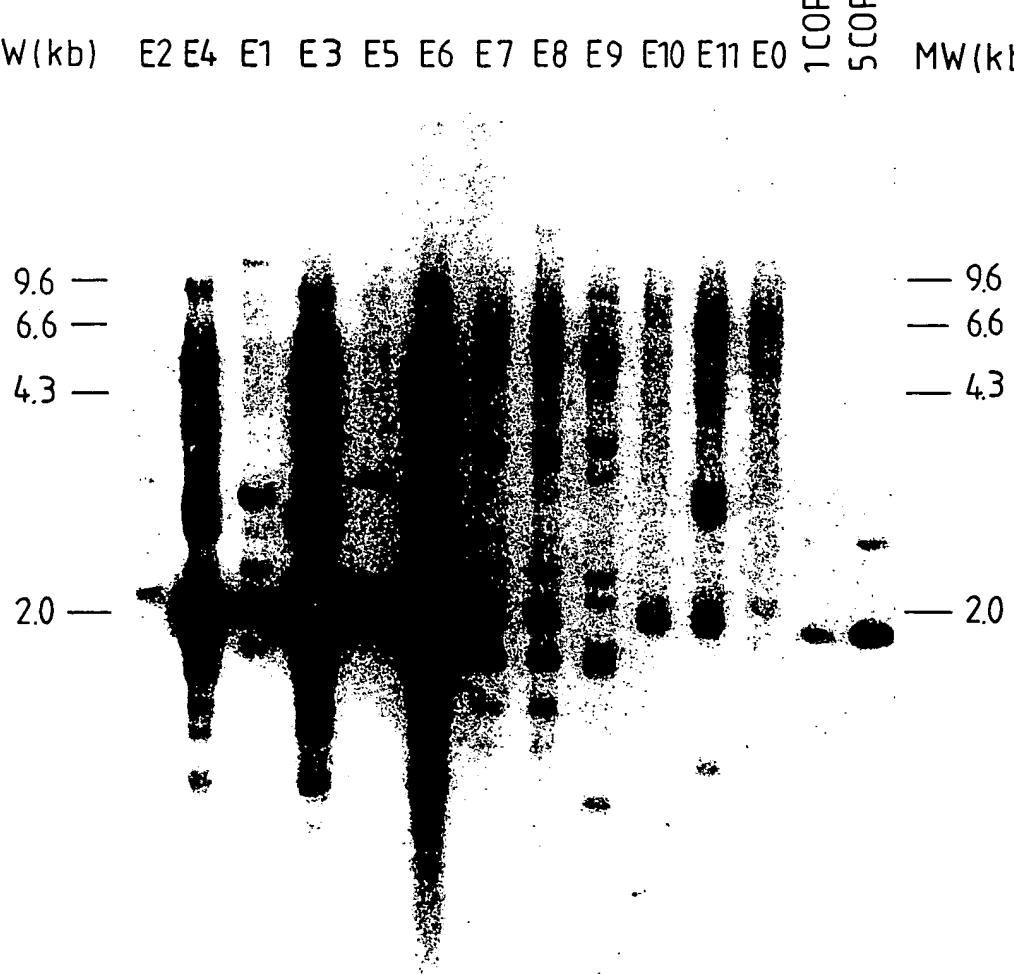
FIG.3

E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E0 B13



FIG.4

MW(kb) E2 E4 E1 E3 E5 E6 E7 E8 E9 E10 E11 E0 MW(kb)



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FIG. 5

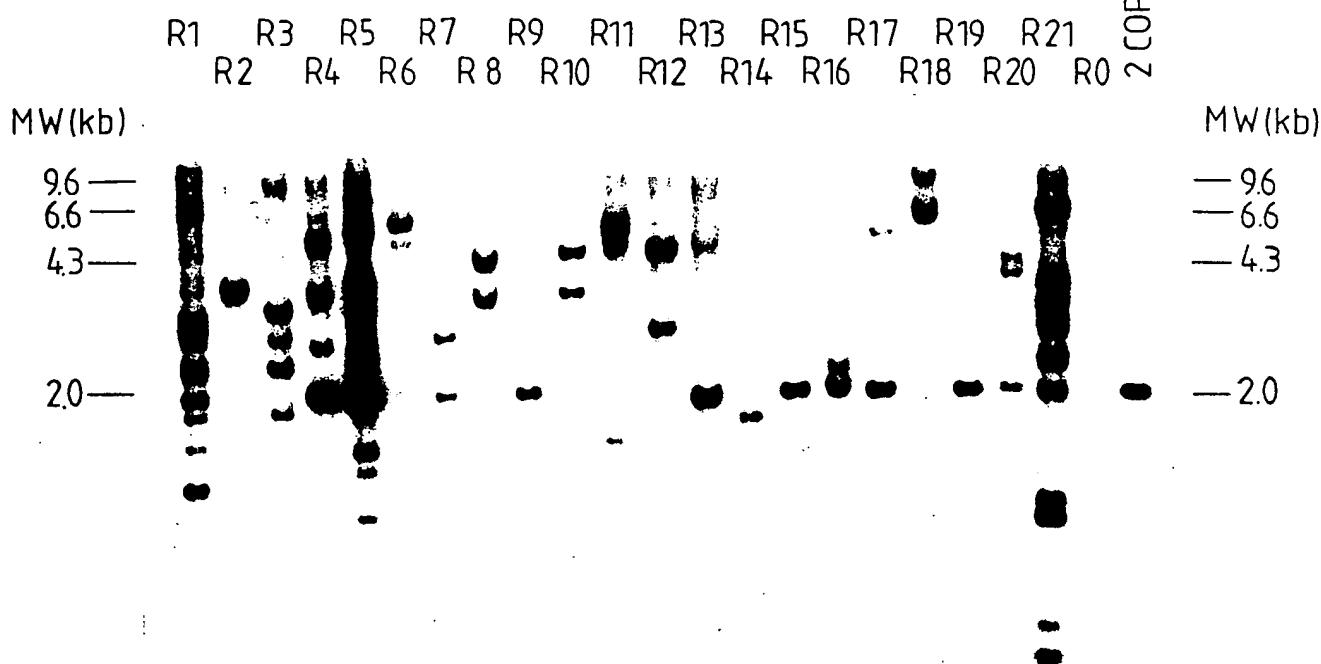
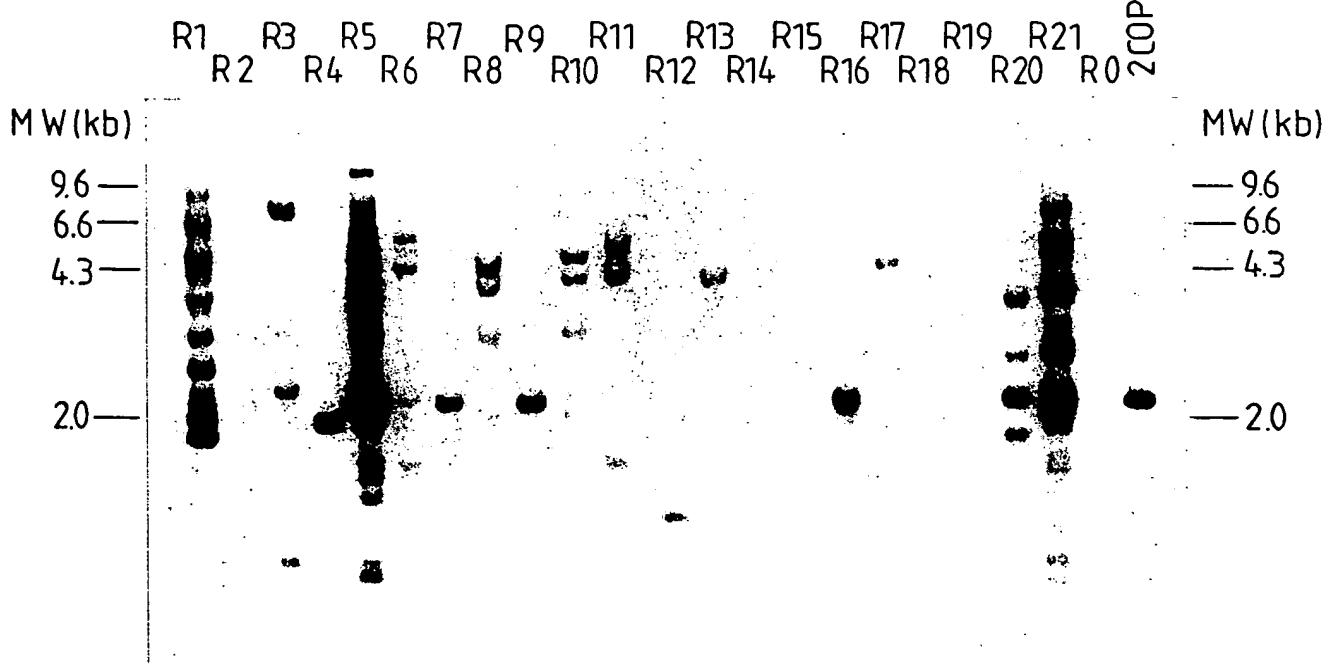


FIG. 5 B



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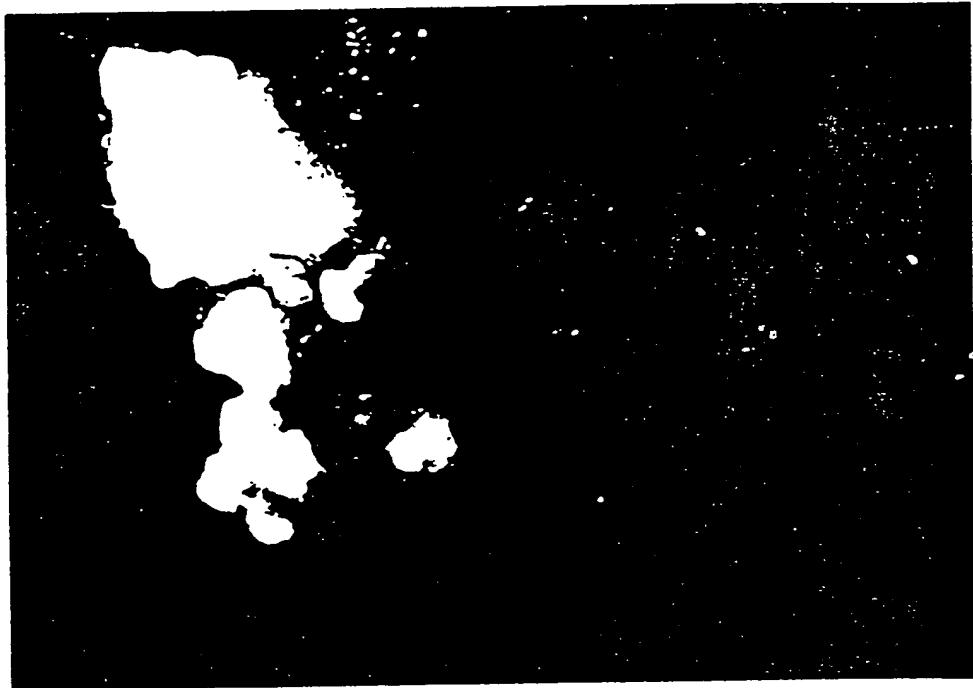


Fig. 6

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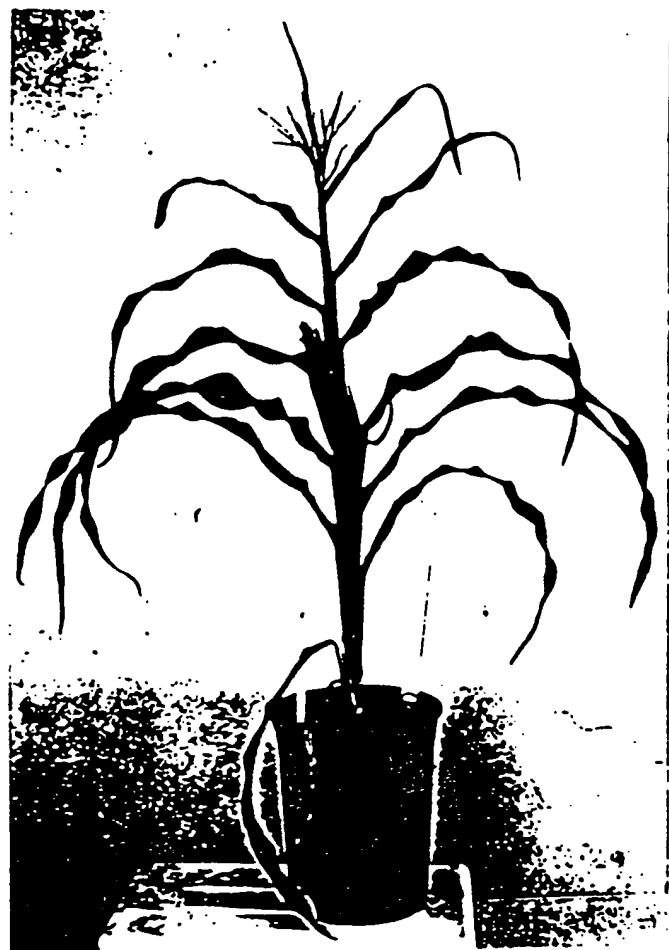


Fig. 7(A)



Fig. 7(B)

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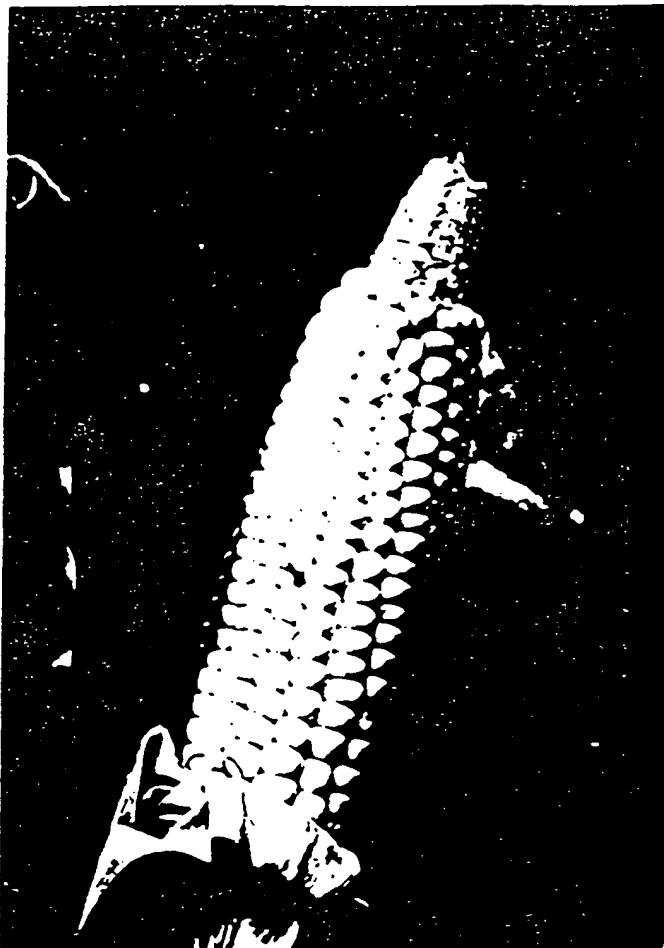


Fig. 7(C)

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Fig. 7(D)

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Fig. 8(A)



Fig. 8(B)

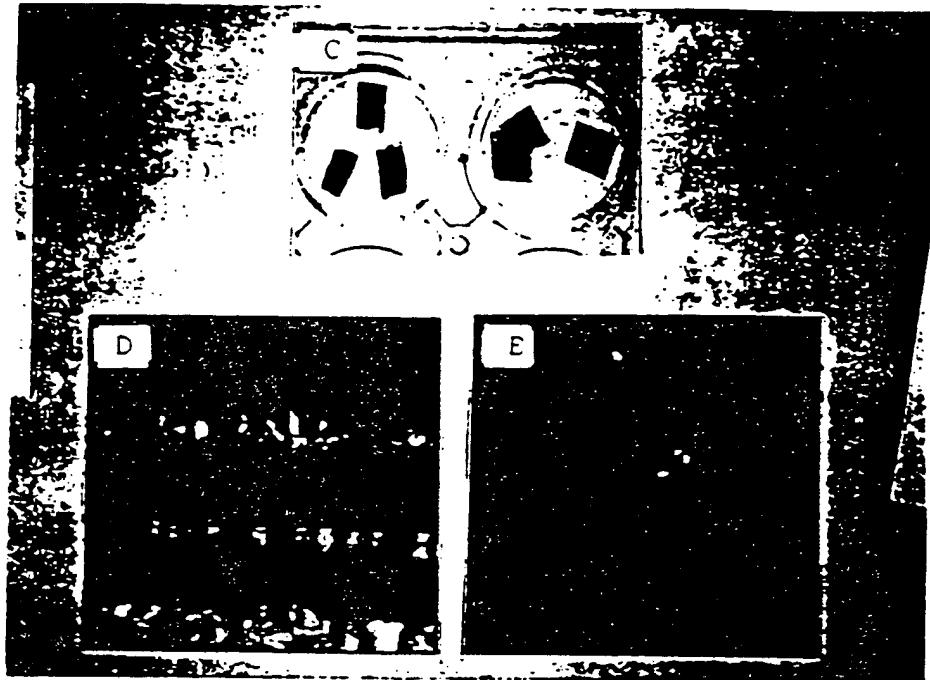


Fig. 8(C - E)

R₀ PLANTS

FIG. 9

E10

E11

E2/E5 E3/E4/E6

B73

BMS BAR

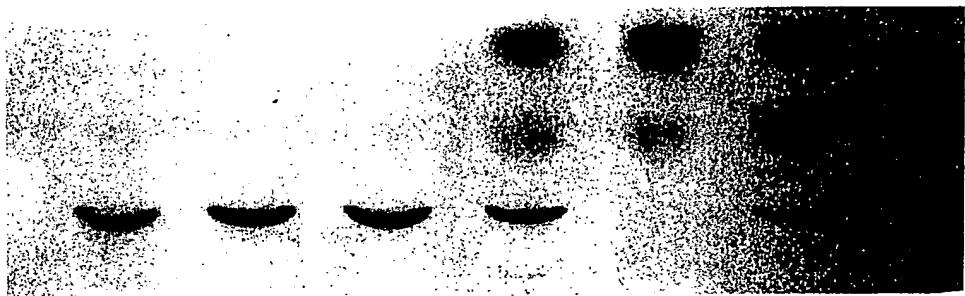
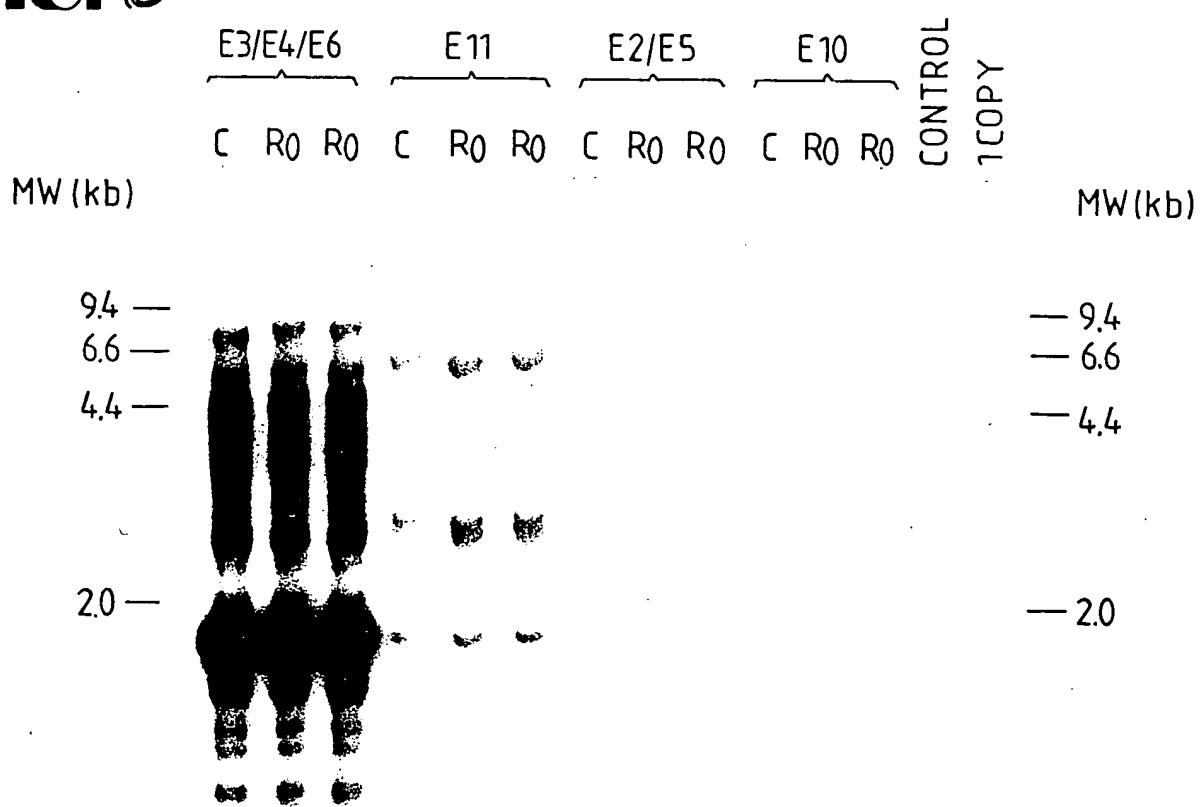


FIG. 10

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FIG.||A

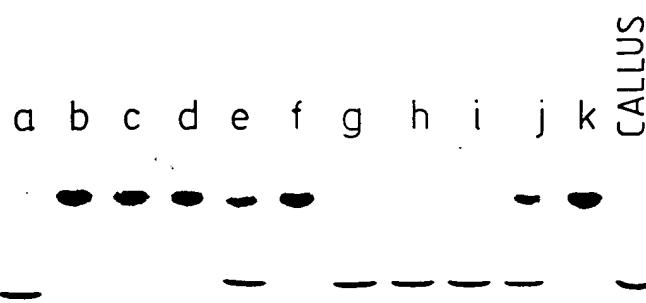


FIG.||B

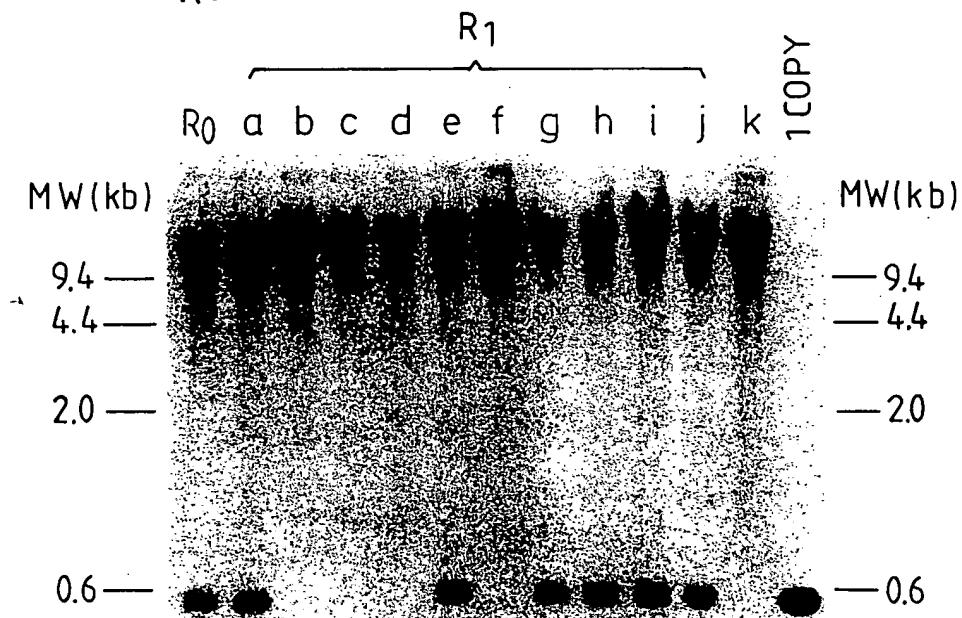


Figure 12. Nucleotide sequence of synthetic HD73 Bt gene.

31/11

1/1 ATG GAT AAC AAT CCG AAC ATC AAT GAA TGC ATT CCT TAC AAT TGC CTC AGC AAC CCT GAA
Met asp asn asn pro asn ile asn glu cys ile pro tyr asn cys leu ser asn pro glu
61/21 91/31

GTG GAA GTG CTG GGT GGC GAA CGC ATC GAA ACC GGT TAC ACC CCA ATC GAT ATT TCC CTG
val glu val leu gly gly glu arg ile glu thr gly tyr thr pro ile asp ile ser leu
121/41 151/51

TCC CTG ACC CAA TTT CTG CTG AGC GAA TTT GTG CCC GGT GCT GGC TTT GTG CTG GGC CTG
ser leu thr gln phe leu leu ser glu val pro gly ala gly phe val leu gly leu
181/61 211/71

GTG GAT ATC ATC TGG GGC ATT TTT GGT CCC TCC CAA TGG GAC GCC TTT CTG GTG CAA ATT
val asp ile ile trp gly ile phe gly pro ser gln trp asp ala phe leu val gln ile
241/81 271/91

GAA CAG CTG ATT AAC CAA CGC ATC GAA GAA TTC GCT AGG AAC CAA GCC ATT TCC CGC CTG
glu gln leu ile asn gln arg ile glu glu phe ala arg asn gln ala ile ser arg leu
301/101 331/111

GAA GGC CTG AGC AAT CTG TAC CAA ATT TAC GCC GAA TCC TTT CGC GAG TGG GAA GCC GAT
glu gly leu ser asn leu tyr gln ile tyr ala glu ser phe arg glu trp glu ala asp
361/121 391/131

CCT ACC AAT CCA GCC CTG CGC GAA GAG ATG CGC ATT CAA TTC AAT GAC ATG AAC AGC GCC
pro thr asn pro ala leu arg glu glu met arg ile gln phe asn asp met asn ser ala
421/141 451/151

CTG ACC ACC GCT ATT CCT CTG TTT GCC GTG CAA AAT TAC CAA GTG CCT CTG TCC TCC CTG
leu thr thr ala ile pro leu phe ala val gln asn tyr gln val pro leu leu ser val
481/161 511/171

TAC GTG CAA GCT GCC AAT CTG CAT CTG TCC GTG CTG CGC GAT GTG TCC GTG TTT GGC CAA
tyr val gln ala ala asn leu his leu ser val leu arg asp val ser val phe gly gln
541/181 571/191

AGG TGG GGC TTT GAT GCC GCC ACC ATC AAT AGC CGC TAC AAT GAT CTG ACC AGG CTG ATT
arg trp gly phe asp ala ala thr ile asn ser arg tyr asn asp leu thr arg leu ile
601/201 631/211

GGC AAC TAC ACC GAT TAC GCT GTG CGC TGG TAC AAT ACC GGC CTG GAA CGC GTG TGG GGC
gly asn tyr thr asp tyr ala val arg trp tyr asn thr gly leu glu arg val trp gly
661/221 691/231

CCA GAT TCC CGC GAT TGG GTG AGG TAC AAT CAA TTT CGC CGC GAA CTG ACC CTG ACC CTG
pro asp ser arg asp trp val arg tyr asn gln phe arg arg glu leu thr leu thr val
721/241 751/251

CTC GAT ATC GTG GCT CTG TTC CCA AAT TAC GAT AGC CGC CGC TAC CCA ATT CGA ACC ACC CTG
leu asp ile val ala leu phe pro asn tyr asp ser arg arg tyr pro ile arg thr val
781/261 811/271

TCC CAA CTG ACC CGC GAA ATT TAC ACC AAC CCA GTG CTG GAA AAT TTT GAT GGT AGC TTT
ser gln leu thr arg glu ile tyr thr asn pro val leu glu asn phe asp gly ser phe
841/281 871/291

CGC CGC TCC GCT CAG CGC ATC GAA CGC AGC ATT AGG AGC CCA CAT CTG ATG GAT ATC CTG
arg gly ser ala gln gly ile glu arg ser ile arg ser pro his leu met asp ile leu
901/301 931/311

AAC ACC ATC ACC ATC TAC ACC GAT GCT CAT AGG GGT TAC TAC TAC TGG TCC GGC CAT CAA
asn ser ile thr ile tyr thr asp ala his arg gly tyr tyr trp ser gly his gln
961/321 991/331

ATC ATG GCT TCC CCT GTG GGC TTT TCC GGG CCA GAA TTC ACC TTT CCA CTG TAC GGC ACC
ile met ala ser pro val gly phe ser gly pro glu phe thr phe pro leu tyr gly thr
1021/341 1051/351

ATG GGC AAT GCC GCT CCA CAA CGC ATT GTG GCT CAA CTG GGT CAG GGC GTG TAC CGC
met gly asn ala ala pro gln gln arg ile val ala gln leu gly gln gly val tyr arg
1081/361 1111/371

ACC CTG TCC TCC ACC CTG TAC CGC CGC CCT TTT AAT ATC GGC ATC AAC AAC CAG CAA CTG
thr leu ser ser thr leu tyr arg arg pro phe asp ile gly ile asn asn gln leu
1141/381 1171/391

TCC GTG CTG GAC GGC ACC GAA TTT GCT TAC GGC ACC TCC TCC AAT CTG CCA TCC GCT GTA
ser val leu asp gly thr glu phe ala tyr gly thr ser ser asn leu pro ser ala val
1201/401 1231/411

TAC CGC AAG AGC GGC ACC GTG GAT TCC CTG GAT GAA ATC CCA CCA CAG AAT AAC AAC GTG
tyr arg lys ser gly thr val asp ser leu asp glu ile pro pro gln asn asn val

Figure 12 contd.

1261/421 1291/431
CCA CCT AGG CAA CGC TTT AGC CAT CGC CTG AGC CAT GTG TCC ATG TTT CGC TCC GGC TTT
pro pro arg gln gly phe ser his arg leu ser his val ser met phe arg ser gly phe
1321/441 1351/451
AGC AAT AGC AGC GTG AGC ATC ATC CGC GCT CCT ATG TTC TCC TGG ATC CAT CGC AGC GCT
ser assn ser ser val ser ile ile arg ala pro met phe ser trp ile his arg ser ala
1381/461 1411/471
GAA TTT AAC AAC ATC ATT GCC TCC GAT AGC ATT ACC CAA ATC CCT GCC GTG AAG GGC AAC
glu phe assn assn ile ile ala ser asp ser ile thr gln ile pro ala val lys gly assn
1441/481 1471/491
1501/501 1531/511
CTG AAT AGC AGC GGC AAT AAC ATT CAG AAT CGC GGC TAC ATT GAA GTG CCA ATT CAC TTC
leu assn ser ser gly assn assn ile gln assn arg gly tyr ile glu val pro ile his phe
1561/521 1591/531
CCA TCC ACC TCC ACC CGC TAC CGC GTG CGC TAC GCT TCC GTG ACC CCA ATT CAC
pro ser thr ser thr arg tyr arg val arg tyr ala ser val thr pro ile his
1621/541 1651/551
CTC AAC GTT AAC TCG GGC AAT TCC TCC ATT TTT TCC AAT ACC GTG CCA GCT ACC GCT ACC
leu assn val assn trp gly assn ser ser ile phe ser assn thr val pro ala thr ala thr
1681/561 1711/571
1741/581 1771/591
TCC TCC CTG GGT AAT ATC GTG GGT GTG CGC AAT TTT AGC GGC ACC GCC GGC GTG ATC ATC
ser ser leu gly assn ile val gly val arg assn phe ser gly thr ala gly val ile ile
1801/601 1831/611
GAC CGC TTT GAA TTT ATT CCA GTG ACC GCC ACC CTC GAG TAG GTA
asp arg phe glu phe ile pro val thr ala thr leu glu AMB val

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1261/421

1291/431

CCA CCT AGG CAA GGC T~~2~~ CC CAT CGC CTG AGC CAT GTG TCC ATG T~~3~~ CTC TCC CCC TTT
pro pro arg gln gly phe ser his arg leu ser his val ser met P~~4~~ g ser gly phe
1321/441 1351/451

AGC AAT AGC ACC GTC ACC ATC ATC CGC GCT CCT ATG TTC TCC TGG ATC CAT CGC TCC GCT
ser asn ser ser val ser ile ile arg ala pro met phe ser trp ile his arg ser ala
1381/461 1411/471

GAG TTC AAC AAC ATC ATC CCG TCC CAA ATC ACC CAA ATC CCG CTC ACC AAG TCC ACG
glu phe asn asn ile ile pro ser ser gln ile thr gln ile pro leu thr lys ser thr
1441/481 1471/491

AAC CTC GCC TCC CCC ACG TCC GTC AAG GGC CCG GGC TTC ACC GGC GGC gac ATC CTC
asn leu gly ser gly thr ser val val lys gly pro gly phe thr gly gly asp ile leu
1501/501 1531/511

CGC CGC ACG TCC CCG GGC CAG ATC TCC ACC CTC CGC GTC AAC ATC ACG GCT CCG CTG AGC
arg arg thr ser pro gly gln ile ser thr leu arg val asn ile thr ala pro leu ser
1561/521 1591/531

CAG CGC TAC AGG GTC CGC ATC AGA TAC GCT AGC ACG ACC AAC CTG CAA TTC CAC ACG TCC
gin arg tyr arg val arg ile arg tyr ala ser thr thr asn leu gln phe his thr ser
1621/541 1651/551

ATC GAC GGC AGA CCG ATC AAC CAG GGC AAC TTC AGC GCG ACC ATG AGC TCC GGG TCC AAC
ile asp gly arg pro ile asn gln gly asn phe ser ala thr met ser ser gly ser asn
1681/561 1711/571

CTC CAG TCC GGC TCC TTC CGC ACG GTC GGT TTC ACC ACG CCG TTC AAC TTC TCC AAC GGC
leu gln ser gly ser phe arg thr val gln phe thr thr pro phe asn phe ser asn gly
1741/581 1771/591

TCC TCC GTC TTC ACC CTC TCC GCT CAT GTC TTC AAC TCC GGC AAC GAG GTC TAC ATC gac
ser ser val phe thr leu ser ala his val phe asn ser gly asn glu val tyr ile asp
1801/601 1831/611

CGC ATC GAG TTC GTC CCG CCC GAG GTC ACC TTC GAG CTC GAG TAG GTA
arg ile glu phe val pro ala glu val thr phe glu leu glu AMB val

Figure 13. Nucleotide sequence of synthetic HD1.

31/11

1/1 ATG GAT AAC AAT CCG AAC ATC AAT GAA TGC ATT CCT tac AAT TGC CTC ACC AAC CCT GAA
Met asp asn asn pro asn ile asn glu cys ile pro tyr asn cys leu ser asn pro glu
61/21 91/31

61/21 GTG GAA GTG CTG GGT GGC GAA CGC ATC GAA ACC GGT TAC ACC CCA ATC GAT ATT TCC CTG
val glu val leu gly gly glu arg ile glu thr gly tyr thr pro ile asp ile ser leu
121/41 151/51

121/41 TCC CTG ACC CAA TTT CTG CTG ACC GAA TTT GTG CCC GGT GCT GGC TTT GTG CTG GGC CTG
ser leu thr gln phe leu leu ser glu phe val pro gly ala gly phe val leu gly leu
181/61 211/71

181/61 GTG GAT ATC ATC TGG GGC ATT TTT GGT CCC TCC CAA TGG GAC GCC TTT CTG GTG CAA ATT
val asp ile ile trp gly ile phe gly pro ser gln trp asp ala phe leu val gln ile
241/81 271/91

241/81 GAA CAG CTG ATT AAC CAA CGC ATC GAA GAA TTC GCT AGG AAC CAA GCC ATT TCC CGC CTG
glu gln leu ile asn gln arg ile glu glu phe ala arg asn gln ala ile ser arg leu
301/101 331/111

301/101 GAA CGC CTG ACC AAT CTG TAC CAA ATT TAC GCC GAA TCC TTT CGC GAG TGG GAA GCC GAT
glu gly leu ser asn leu tyr gln ile tyr ala glu ser phe arg glu trp glu ala asp
361/121 391/131

361/121 CCT ACC AAT CCA GCC CTG CGC GAA GAG ATG CGC ATT CAA TTC AAT GAC ATG AAC AGC GCC
pro thr asn pro ala leu arg glu glu met arg ile gln phe asn asp met asn ser ala
421/141 451/151

421/141 CTG ACC ACC GCT ATT CCT CTG TTT GCC GTG CAA ATT TAC CAA GTG CCT CTG CTG TCC GTG
leu thr thr ala ile pro leu phe ala val gln asn tyr gln val pro leu leu ser val
481/161 511/171

481/161 TAC GTG CAA GCT GCC AAT CTG CAT CTG TCC GTG CTG CGC GAT GTG TCC GTG TTT GGC CAA
tyr val gln ala ala asn leu his leu ser val leu arg asp val ser val phe gly gln
541/181 571/191

541/181 AGG TCG GGC TTT GAT GGC GCC ACC ATC AAT AGC CGC TAC AAT GAT CTG ACC AGG CTG ATT
arg trp gly phe asp ala ala thr ile asn ser arg tyr asn asp leu thr arg leu ile
601/201 631/211

601/201 GCC AAC TAC ACC GAT TAC GCT GTG CGC TGG TAC AAT ACC GGC CTG GAA CGC GTG TGG GGC
gly asn tyr thr asp tyr ala val arg trp tyr asn thr gly leu glu arg val trp gly
661/221 691/231

661/221 CCA GAT TCC CGC GAT TGG GTG AGG TAC AAT CAA TTT CGC CGC GAA CTG ACC CTG ACC GTC
pro asp ser arg asp trp val arg tyr asn gln phe arg arg glu leu thr leu val
721/241 751/251

721/241 CTC GAT ATC GTG GCT CTG TTC CCA AAT TAC GAT AGC CGC CGC TAC CCA ATT CGA ACC GTC
leu asp ile val ala leu phe pro asn tyr asp ser arg arg tyr pro ile arg thr val
781/261 811/271

781/261 TCC CAA CTG ACC CGC GAA ATT TAC ACC AAC CCA GTG CTG GAA AAT TTT GAT GGT AGC TTT
ser gln leu thr arg glu ile tyr thr asn pro val leu glu asn phe asp gly ser phe
841/281 871/291

841/281 CGC CGC TCC GCT CAG CGC ATC GAA CGC AGC ATT AGG AGC CCA CAT CTG ATG GAT ATC CTG
arg gly ser ala gln gly ile glu arg ser ile arg ser pro his leu met asp ile leu
901/301 931/311

901/301 AAC AGC ATC ACC ATC TAC ACC GAT GCT CAT AGG GGT TAC TAC TGG TCC GGC CAT CAA
asn ser ile thr ile tyr thr asp ala his arg gly tyr tyr trp ser gly his gln
961/321 991/331

961/321 ATC ATG GCT TCC CCT GTG GGC TTT TCC GGG CCA GAA TTC ACC TTT CCA CTG TAC GGC ACG
ile met ala ser pro val gly phe ser gly pro glu phe thr phe pro leu tyr gly thr
1021/341 1051/351

1021/341 ATG CGC AAT GCC GCT CCA CAA CGC ATT GTG GCT CAA CTG GGT CAG CGC GTG TAC CGC
met gly asn ala ala pro gln gln arg ile val ala gln leu gly gln gly val tyr arg
1081/361 1111/371

1081/361 ACC CTG TCC ACC CTG TAC CGC CGC CCT TTT AAT ATC CGC ATC AAC AAC CAG CAA CTG
thr leu ser ser thr leu tyr arg arg pro phe asn ile gly ile asn asn gln gln leu
1141/381 1171/391

1141/381 TCC GTG CTG GAC GGC ACC GAA TTT GCT TAC GGC ACC TCC AAT CTG CCA TCC GCT GTA
ser val leu asp gly thr glu phe ala tyr gly thr ser ser asn leu pro ser ala val
1201/401 1231/411

1201/401 TAC CGC AAG AGC CGC ACC GTG GAT TCC CTG GAT GAA ATC CCA CCA CAG AAT AAC AAC GTC
tyr arg lys ser gly thr val asp ser leu asp glu ile pro pro gln asn asn val